

September 16, 1992

TO: HANS KLETKE LOUISVILLE
FROM: HERM WALTEMADE CLEVELAND

LOUISVILLE SAFETY/INDUSTRIAL HYGIENE AUDIT
August 24-28, 1992

Attached is the final report of Safety/Industrial Hygiene Audit conducted by Diana Jarrell, Dan Gleghorn and Herm Waltemate. This is the first joint GVD/SP&C Safety/Industrial Hygiene audit and the first time a single report covering all areas has been issued.

The Louisville plant has made steady improvement over the past several years. Just recently the plant completed 2,000,000 employee hours without a lost time injury. According to my records this is only the second time in the history of the plant. The 1992 Recordable Incidence rate of 3.77 is somewhat high, but with the current stringent recording requirements and including cases such as tenosynovitis it is not surprising.

In the following chart, I have compared the Louisville recordable and lost-time incidence rates with BLS Chemical and Allied Products, the CMA rates, BFG Geon Vinyl Division rates, and SP&C Division rates.

	<u>BLS</u>	<u>CMA</u>	<u>BFGOODRICH</u> <u>GVD</u>	<u>SP&C</u>	<u>LOUISVILLE</u>
<u>1989</u>	6.40	4.04	3.86	3.98	3.75
Rec. IR	3.00	.81	.92	1.06	.89
Lost Time IR					
<u>1990</u>					
Rec. IR	5.90	3.97	3.25	4.62	2.98
Lost Time IR	2.90	.75	.34	1.95	.25
<u>1991</u>					
Rec. IR	*	3.89	2.26	2.26**	2.06
Lost Time IR	*	.72	.26	.24**	0
<u>1992 Aug</u>					
Rec. IR	*	3.79	2.11	2.65**	3.77
Lost Time IR	*	.68	.13	.44**	0

* Not Available

** Does Not Include Arrowhead

NGC 12435

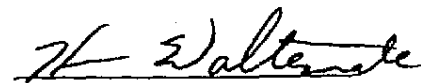
The report format is laid out for you to write in your abatement program and indicate the status as Completed, In-Progress, or Incomplete. A progress report giving the status of the items requiring attention is due November 16, 1992 and each quarter thereafter until all items have been corrected. Please send a copy of each progress report to me and Diana Jarrell SP&C. For your convenience, I have included the word processing disc on which you can enter your response.

The report includes the following:

- I. Positive Observations
- II. 1992 Items which Need to be Corrected
- III. Plant Inspection Tour
- IV. House Keeping Evaluation
- V. Plant Safety Audit Rating
- VI. Plant Industrial Hygiene Rating


Dan Gleghorn


Diana Jarrell


Herm Waltemate

HW/JS
lsvlsafe.d&h

cc: G. Higby D. Gleghorn
R. Grahek/M. Marshall D. Jarrell
E. Martinelli/W. Patient K. Willings/G. Krcmar
C. Mattia K. H. Lee
A. Simpson J. A. Weaver/R. LaCosse
J. Tanzilli M. G. Fletcher
L. Larson

NGC 12436

LOUISVILLE PLANT
SAFETY/INDUSTRIAL HYGIENE AUDIT
August 24-28, 1992

I. Positive Observation

1. The audit team was favorably impressed with the establishing of Safety Councils within the various departments. This provides another means for employees to be involved with the safety program.
2. The audit team was also very pleased with the various departments training documentation. In most cases the individual employee was identified, the content of the training was given, the means of verification etc. was readily available.

Each department also had established a system which assured that follow-up training was provided to employees who missed the scheduled training.

3. The monthly ventilation efficiency testing program conducted by Jim Hafling is very good. Although the OSHA Lead Standard 29 CFR 1910.1025(e)(5)(i) only requires ventilation efficiency testing every 3 months, your program goes beyond the requirement.
4. The plant has been conducting Process Hazard Analysis on new projects and equipment modification since 1990. At this time you should be in a good position to meet the CMA Responsible CARE and OSHA 1910.119 Standard deadlines.

NGC 12437

SAFETY/INDUSTRIAL HYGIENE AUDIT
August 24-28, 1992

II. Items to be Corrected

SA-1992-1

During the plant inspection tour maintenance employees were working on the VCM Sphere high level alarm without proper authorization. The job began on 8/21 and proper authorization was received at that time. The job continued on 8/27 and the MWO was not reauthorized on that day.

Plant
Response

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-2

Protruding conductive level probes in service with static explosive sensitive dusts must be removed and replaced with a device suitable for that service.

Our position on level probes is as a result of the May 9, 1988 Avon Lake Durastrength 200 dust explosion with the ignition caused by a 50" long level probe and the May 9, 1989 Akron Agerite Resin D dust explosion caused by a level detector (Roto-Bin-Dicator).

On September 22-23, we need to determine with George Petino of Hazards Research Corporation if the five level probes presently in combustible dust service are suitable.

Plant
Response

NGC 12438

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-3

I have recently become aware of six explosions involving the dumping of powders from bulk bag containers. This item also needs to be reviewed with George Petino and an agreement reached on the proper design for safely handling these bulk bags with raw material.

We also should consider how BFG deals with finished products in bulk bags. We may need to ground the bulk bag container, apply a label advising of the hazard of static and include a comment in the MSDS.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-4

A documentation system on the auditing of individual employees with regard to Lockout, Hot Work, Vessel Entry and Forklift Trailer Entry needs to be established.

The individual lockout audits are a requirement of OSHA Standard 1910.147 and was an item identified in the 1990 Divisional Safety Audit.

**Plant
Response**

NGC 12439

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-5

In 1981 Avon Lake experienced a lid blowing off of a fresh VCM filter when the washers bowed and the hold down ears spread apart.

The T-Bolt headers on the large PVC reactors have a similar design and the washers were observed to be severely bowed. I have discussed my concern with Central Engineering and it is recommended that blind flanges be installed to replace the quick opening T-Bolt headers on the large PVC reactors.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-6

During the plant safety inspection two pipe fitters were observed installing a new pipeline in an elevated pipe rack. Neither pipe fitter was wearing a safety belt.

You need to require a safety belt with this type of elevated work and enforce the use of them.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

NGC 12440

SA-1992-7

In 1991 nine mill drills including a check for stopping distance were conducted. In 1992 only 3 mill drills including a check for stopping distance have been conducted to date.

BFG GVD Safety Standard SA-113 requires that mill drills including a test for stopping distance, be conducted at least once per month by each shift.

You need to comply with this requirement.

Plant
Response

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-8

An overhead cable to attach safety lifelines when washing out the Railroad Hopper Cars needs to be provided. This was included in the 1990 safety audit.

Plant
Response

Status

_____ Completed _____ In-Progress _____ Incomplete

NGC 12441

SA-1992-9

In 1992 the GVD/SP&C Divisions have experienced several recordable injuries involving second degree burns. Currently second degree burns make up 23 percent of our total recordable cases. All plants are being urged to inspect for hot surfaces (140°F) which might cause burns and take preventive measures. You need to audit the plant for hot surfaces and proceed with insulating, guarding or post warning signs.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-10

Individuals who are expected to use fire extinguishers must be trained annually. This is a requirement of OSHA Standard 1910.157(g)(1)(2)&(3). BFG Safety Standard SA-123 requires that a firewatch be qualified to use a fire extinguisher.

You need to take steps to provide fire extinguisher training to individuals who are assigned as a firewatch during hot work. Also employees must be instructed to turn in the fire alarm and evacuate the area if they observe a fire and have not been currently trained on fire extinguishers.

**Plant
Response**

NGC 12442

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-11

In reviewing the relief valve inspection program it was found that a few relief valves are past due and the extension is not being obtained as required by the plant Relief Valve Inspection Procedure M-8 Section V-c.

A monthly report listing relief valves past due needs to be issued and the authorization for an extension must be documented.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-12

With some of the recent major fires and explosions, the importance of a safe exit from the workplace is brought out. All of your exits need to be properly identified and illumination provided as required by OSHA Standard 1910.37(q)(6). Each of your fence line gates need to be marked as an exit, emergency exit, not an exit or be identified with its actual character (function). The fence line emergency exits need to be included in your plant evacuation procedure.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

SA-1992-13

Although the plant has begun implementing its Process Safety Management Program in accordance with OSHA 29 CFR 1910.119 and the CMA Process Safety Code, the Process Hazard Review information was not yet readily accessible to employees. This information must be located in an accessible area and all affected employees must be informed of its availability.

A review of the Process Hazard Review for the TempRite Operation showed several open items with no scheduled completion dates. It is critical that all open items be resolved in a timely manner. There was no formal system in place for tracking of open items and documenting closure. This will become a bigger task as more Process Hazard Reviews are completed.

The plant must make Process Hazard Review information accessible to all affected employees and must institute a formal system for follow-up of all open items, including documentation of their closure.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

NGC 12444

SA-1992-14

Responsibility for the acrylate tank car unloading area was recently transferred to GEON Latex. There were no documented emergency shutdown or response procedures in case of a problem with a tank car, available at the time of the audit. No personal protective equipment was located in the area.

The potential hazards of acrylate tank car unloading must be evaluated and appropriate emergency response procedures documented. Personal protective equipment as identified in the emergency procedures, should be readily accessible. When developed, the emergency response procedures must be communicated to all affected employees.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

NGC 12445

SA-1992-15

During the plant walk-throughs, several worn or damaged slings were available for use in various areas. There was no periodic inspection program in place for slings at the time of the audit.

A hoist inspection program was in place which provides annual inspection by Maintenance. However, when interviewed, some employees who use the equipment were not aware of the need to perform daily inspections before use.

OSHA Standards 29 CFR 1910.179(j)(2) and 1910.184(d) require daily visual inspection of hoists and slings prior to their use. All employees who use this equipment must be aware of the inspection requirement and how to recognize damage that may affect safe use. Damaged equipment must be removed from service.

**Plant
Response**

Status

_____ Completed _____ In-Progress _____ Incomplete

IH-1992-16

On August 24, 1992, several bags of Flint Shot Sandblast which contain crystalline silica, a carcinogen, were found in the sandblasting shed. A silica-free sandblast medium must be substituted for this material. Substitution of a less hazardous material whenever feasible is required by the CMA Responsible Care Employee Health & Safety Code, Management Practice 11. Silica-free sandblasting medium is commercially available and appropriate for most applications.

**Plant
Response**

NGC 12446

Status

_____ Completed _____ In-Progress _____ Incomplete

IH-1992-17

The OSHA 29 CFR 1910.1200(f)(3)&(4), Hazard Communication Standard, requires warnings be placed on hazardous materials. The following materials were not properly labeled:

- 1.a. PVC Compound in 50 pound bags.
- b. PVC Compound in bulk boxes.
- c. Railroad Hopper Cars with GVD material.

Labeling of GVD products does not conform to the specifications of our MSDS. We are asking Bob Hinderer to implement corrective action in GVD on this issue.

- 2.a. TempRite CPVC powder in bulk bags.
- b. TempRite Railroad Hopper Cars.

Other CPVC materials are labeled but bulk bags and railroad hopper cars are not. We are asking Jim Tanzilli to implement corrective action in SP&C on this issue.

- 3.a. PVA from Air Products
- b. Ross Wax
- c. Harco Wax in 50# bags.

The referenced purchased material did not have warning labels. We are asking Frank DeWolf to implement corrective action on this issue.

This matter must be resolved on a divisional level. You will be advised of the corrective action to take.

The individuals named above must advise us by October 15, 1992 of their corrective action plan and timetable to comply with their portion of this item.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12447

IH-1992-18 OSHA 29 CFR 1910.1200(f)(5), Hazard Communication, requires that each container of Hazardous Material be labeled. The following items must be corrected:

1. Hand Weighs - At one time you had a book of labels with a corresponding product code. The book was not evident nor was the employee aware of a labeling procedure. The book or some other method must be re-established in accordance with 1910.1200(f)(6).
2. Scrap Latex (460X94) in fiber drums - needs labels.
3. Gasoline tank - needs gasoline painted on it.
4. Vinyl Spheres and tanks TK-2P & TK-3P need NFPA or content labels.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12448

1H-1992-19

Product specific MSDS are not provided for each vinyl resin and compound. This is an issue that must be corrected on a divisional level. I am asking Mark Hross, by October 15, 1992, to advise me of the time table for correction of this item.

Response

Status

_____	Complete
_____	Incomplete
_____	No Action

NGC 12449

IH-1992-20

Breathing Air Stations must be labeled and filters installed in accordance with BFG Engineering Standard ST-404.6 at the Sandblast Area and for the three Vinyl Unloading Stations. Please advise me your timetable for correction of this item by October 15, 1992.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12450

IH-1992-21

Outlets where water might be used for human consumption must be labeled as to whether the water is Potable or Non-Potable per IH-204, "Protection of Potable Water Supply".

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12451

III-1992-22

On your form for notification of monitoring results the date of employee notification needed to be added (the form was immediately changed). An explanation of corrective actions also needs to be added to the form.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12452

IH-1992-23

OSHA 29 CFR 1910.134(a)(10) and BFG Occupational Health Policy Section 1.17-1, require that respirator users be physically qualified to wear them and OSHA Standard 1910.134(e)(5) requires that the wearer be instructed and fitted. This regulation applies to all respirators including the 3M 8710 in Compounding. Please advise me by October 15, 1992 how you intend to correct this item.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12453

IH-1992-24

Your Job Exposure Survey and Monitoring Priority program is progressing. The Maintenance Group should be added to your surveys.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12454

Large Poly Area (cont...)

3. A procedure needs to be established whereby the operator would evacuate the control room or don a suitable respirator when the Halon system is actuated.
4. Ladder gates need to be provided on the ladder to the top of the control room, to FIL-ID and to filters 6F/5F. Refer to OSHA Std. 1910.23 (a)(2).
5. The high temperature guards have not been replaced on the hot water pumps.
6. Conduit cover missing in the HRC pump room. Refer to OSHA Std. 1910.305(b)(2).
7. Handrail on the stairs at the RR resin loading area does not have the required 1-1/2" clearance. Refer to OSHA Std. 1910.23(e)(6).
8. Washers on the reactors poly T-bolt headers are severely deformed and need to be replaced.
9. The coating header poly #6 is very hot and needs to be insulated.
10. Breaker with opening to the buss in the GC room. Refer to OSHA Std. 1910.303(g)(2).
11. PVA from Air Products & Harco in 50# bags have no HC warning label. Refer to OSHA Std. 1910.1200 (f)(1).
12. Access to 1-1/2" fire hose is blocked with a drum. Refer to OSHA Std. 1910.158(c)(2).
13. Two of the steam outlets are very hot and need to be insulated or guarded. Also, the DM water heater is hot and needs to be insulated or guarded.
14. Extension cord to the air conditioner in B-158 needs to be replaced with permanent wiring. Refer to OSHA Std. 1910.305(g)(1).
15. Observed two pipefitters from Area Shop #4 working on an elevated pipe rack without safety belts.
16. LPA control room - toilet bowl cleaner should not be stored on top of electrical circuit breaker box behind the control console.
17. Railcar loading area - city water should be marked "potable water."

Large Poly Area (cont....)

18. In Building 112 bagging area, compressed air used for cleaning was not regulated to 30 PSI (29 CFR 1910.242 (b)). Regulator was set to 80 PSI and non-relieving air nozzle was in use.
19. In Building 112 bagging area, bagging machine bag positioning arm was not guarded or equipped with a sensor to protect worker in its range of motion.
20. The four scaffold platforms at the Day silo area do not comply with OSHA Std. 1910.28. Recommend replacing with fixed metal platforms which meet OSHA and BFG standards.

Arrowhead Installation

1. Curb was damaged in the containment area.
2. Extension cords being used in place of permanent wiring.
3. No chemical list index for MSDS book.

August 26, 1991

Compound Area

1. The press and grinder in the shop need to be bolted in place. Refer to OSHA 1910.212 (b).
2. Ross wax does not have an HC label on the 50-pound bags. Refer to OSHA Std. 1910.1200 (f)(1).
3. An overhead cable for attaching a life line during RR hopper car washing is needed.
4. Hot surfaces and equipment need to be insulated, guarded or posted with a warning sign.
5. Excessive dust was found on the back side of I-beams on the fourth level "A"line and in the Powder Mix Tower.
6. Fork lift truck left running with no operator in attendance. Refer to OSHA Std. 1910.178(m)(5)(i).

Compound Area (cont....)

7. Open junction box in stairway 1-A at 3rd level. Refer to OSHA Std. 1910.305(b)(2).
8. Mill drills and checking of stopping distances are not being done monthly on each shift as required. Only three have been conducted in 1992 and only nine in 1991.
9. One full-face mask below T. Beeler's mask was dirty and not in a bag. All other masks were marked and bagged.
10. 3M 8710 dust masks are used without fit testing.

TempRite Area

1. Spring-loaded valves on three of the safety showers should be changed to stay open ball valves.
2. Holes need to be plugged in electrical junction box. Refer to OSHA Std. 1910.305(b)(2).
3. The ladder on the caustic tank is 33' without a break. A break needs to be provided on ladders greater than 30 feet. Refer to OSHA Std. 1910.27 (d)(2).
4. Ventilation fan guards on the upper level have openings larger than 1/2 inch. Refer to OSHA Std. 1910.212 (a)(5).

Laboratory

1. An illuminated exit sign is needed on the exterior door. Refer to OSHA 1910.37 (q)(1) and (6).
2. A 36' clearance needs to be provided at the electrical breaker box. Refer to OSHA 1910.303(g)(1)(ii).
3. Fire extinguisher with the seal broken.
4. Hot piping to the Wabash press needs to be insulated or guarded.

Boiler House

1. The old electrical cord in the breaker room needs to be disposed.
2. A lockout donut which was cut off needs to be disposed.
3. The old Plant 1 cooling tower needs to be demolished.
4. The rusted Yale 1/2 ton trolley at the cooling tower should be replaced.
5. If the cooling tower strainer platform is 48" high, a handrail is required. Refer to OSHA 1910.23(c).
6. The old instrument cable in the pipe rack should be removed.
7. Water outlets must be marked "potable water" or "non-potable water." Lines now marked "water."
8. HazCom training could use reinforcement.

Clarifier

1. Willson AR-700 air purifying respirator was not in bag in Bldg. 114. The employee had been trained and fit tested.

Shops

1. The LPG cylinder on the Grove Stevedore is mounted upside down. This puts the relieving device in the liquid space and will not operate properly.
2. A monthly report on relief valves past due needs to be prepared. MA-8 procedure Section V-c needs to be followed on relief valves past due for inspection.
3. Slings are not being inspected annually, thus the daily inspection before each use is critical.
4. Circuit breaker #42 in the LPA shop is covered with tape. A metal cover is needed. Refer to OSHA Std. 1910.303 (g)(2).
5. The terminals on the portable welder (LPA) need to be guarded. Refer to OSHA Std. 1910.154(b)(4)(iv).

Shops (cont...)

6. The drill press in shop #2 needs to be secured to the floor. Refer to OSHA Std. 1910.212(b).
7. The welding cable with the taped section, shop #2, needs to be repaired. Refer to OSHA Std. 1910.254(d)(9)(iii).
8. The terminals on the Hobart welder (shop #2) need to be guarded. Refer to OSHA Std. 1910.254 (b)(4)(iv).
9. Empty SCBA cylinder was being stored in the full section in the stockroom.
10. The east exit was blocked with portable stairs in stockroom. Refer to OSHA Std. 1910.37 (k)(2).
11. The self return on the radial arm saw needs repair or additional weight. Refer to OSHA Std. 1910.213(h)(4).
12. The AT&T extension ladder needs to be returned to AT&T. Safety feet are not provided. Refer to OSHA Std. 1910.25(d)(1)(iv).
13. Shop #4 -- the terminals on the Miller welder need to be guarded. Refer to OSHA Std. 1910.254 (b)(4)(iv).
14. Shop #1 -- welding cable is cracking and needs to be repaired. Refer to OSHA Std. 1910.254 (d)(9)(iii).

VCM Spheres

1. Maintenance men were working on the sphere high level alarm without having the MWO reauthorized on 8-27-92. It was authorized initially on 8-21-92.
2. The chains used to secure the gangways are attached to a VCM line and air line. If the RR ever struck these gangways, a spill could occur.
3. Spheres and TK-2P and TK-3P need NFPA labels.
4. Breathing air at VCM unloading stations need a filter that can cover all three units.

LOUISVILLE SAFETY/INDUSTRIAL HYGIENE AUDIT

ITEMS TO BE CORRECTED

1. Warning labels were not provided:
 - a. PVC resin 50-pound bags
 - b. PVC resin Gaylord
 - c. TempRite CPVC powder in supersacks
 - d. Scrap latex in fiber drums 460X94
2. Individual MSDS not provided for each vinyl resin and compound.
3. Exits must be provided with proper identification and illumination.
4. Protruding conductive level probes in service with static sensitive dusts must be removed.
5. Proper design must be provided with raw materials in supersacks to control static electricity.
6. Breathing air stations must be labeled and filters need to be installed per ST-404.6 (sandblast area).
7. Individual audits for lockouts, vessel entry, trailer entry and hot work needs to be documented. (1990)
8. Replace and modify the worn washers on the poly T-bolt headers on all reactors in LPA.
9. Pipefitters observed working on top of pipe rack without life line safety belts.
10. Fire watch/standby must have training in using a fire extinguisher, etc.
11. Audit plant for hot surfaces (140°F) and insulate, guard or post warning signs.
12. Outlets where water might be used for human consumption must be better labeled.
13. Switch to silica-free sandblast medium. Crystalline silica contained in Flint Shot sandblast is a carcinogen. (Reference CMA Employee Health and Safety Code.)
14. An employee notification of monitoring results, need to add date of employee notification and include explanation of planned corrective action.

Corrections to be made (cont...)

15. Training on use of hoists, slings, and similar material handling equipment must include instruction to perform a visual inspection of the equipment prior to each use. (29 CFR 1910.179 (j)(2) and 1910.184 (d).
16. In the acrylate tank car unloading area, need to develop and document emergency shutdown/response procedure and provide appropriate protective equipment in the area.
17. Mill drills and checking of stopping distance must be done monthly by each shift.
18. An overhead cable for attaching life lines when washing out RR hopper cars needs to be provided. (1990)
19. Fit testing must be provided for all respiratory protection used. This includes 3M 8710 Dust Masks. Even voluntary use of a respirator requires that physical exams, fit testing and training be performed.

IH-1992-25

KOSHA requires that a Regulated Area must be established where vinyl chloride concentrations are in excess of the Permissible Exposure Limit. Your monitoring records must be reviewed and regulated areas established where the PEL has been exceeded. Please advise me your timetable for determination and establishment of regulated areas.

Response

Status

_____ Complete
_____ Incomplete
_____ No Action

NGC 12462

III. LOUISVILLE SAFETY/INDUSTRIAL HYGIENE AUDIT

PLANT INSPECTION TOUR

August 24, 1992

1. Broken bulb at exit sign over door in B-116. Refer to OSHA Std. 1910.37(q)(6).
2. Exit sign with illumination is required on door at dock B-116. Refer to OSHA 1910.37(q)(1) and (6).
3. Temporary wire at fire alarm at dock area B-116 needs to be removed. Refer to OSHA Std. 1910.305(a)(2).
4. Gate near entrance with chain and padlock is required to have identification. Refer to OSHA Std. 1910.37(g)(1).
5. The railroad gates, construction gates and gates leading to Zeon Chemical are required to have identification. Refer to OSHA Std. 1910.37(q)(1).
6. The fiber slings in the sandblasting area need to be inspected. Refer to OSHA Std. 1910.184(d).
7. The shop made hook needs to be replaced with a hook made for lifting. Refer to OSHA Std. 1910.184(e)(2)(i) and (ii).
8. At the acrylate railcar unloading area, the telescoping platforms were loose or missing bolts.
9. Gas pump beside the sandblast area, there was no clearly labeled electrical disconnect for the pump in case of emergency. (Reference 29 CFR 1910.106 (g)(3)(iii).
10. Gasoline storage tank has NFPA labels but does not have content identification.

August 25, 1992

1. Wooden pallets must be stored with a 50-ft. separation, B-116.

Latex Operation

1. Handrails on stairs not provided with the required 1-1/2" clearance. Refer to OSHA Std. 1910.23 (c)(6).
2. Handrails less than the 42" height requirement. Refer to OSHA Std. 1910.23 (c)(1).

Latex Operations (cont..)

3. Breaker in the control room with openings. Refer to OSHA Std. 1910.303 (g)(2).
4. In Geon Latex 2nd floor control room, miscellaneous storage was blocking work clearance around circuit breakers and disconnects (29 CFR 1910.303(g)).
5. MSDS for Isotron 22 not available in area. Refer to OSHA Std. 1910.1200 (g)(8).
6. The windows in the control room should be removed with the current modification.
7. East transfer station water should be labeled Zeolite water.
8. Water faucet at sink outside the Latex Recovery Control Room must be labeled "Non-Potable Water."
9. Emergency personal protective equipment, including respiratory protection and procedures are needed at the railcar unloading station.
10. Three electrical seals in the breaker room on the roof were not poured. Refer to OSHA Std. 1910.307(b).
11. Open wiring inside breaker room should be removed or covered with wire nuts. Refer to OSHA Std. 1910.303 (a)(1)(iii).
12. When nitrogen is used to unload the vinyl acetate truck, the supplier should be notified of the potential hazard.
13. Portable safety eyewash in the tank farm is defective.
14. The stairs to the tank farm pump pad needs to be provided with handrails. Refer to OSHA Std. 1910.23(d)(1).
15. The aluminum pik board on top of the storage tanks needs to be returned to B-7AA.
16. A suitable dockboard should be provided for unloading empty drums. Presently fiberboard sheets are being used.

Large Poly Area

1. Openings in breaker PP3 and 4 in the control need to be covered. Refer to OSHA Std. 1910.303(g)(2).
2. The emergency light behind the control panel is not working.

NGC 12464

LOUISVILLE 1992

IV. HOUSEKEEPING EVALUATION

<u>AREA</u>	<u>EVALUATION</u>
LABORATORY	8 EXCEEDS REQUIREMENTS
STOCKROOM	8 EXCEEDS REQUIREMENTS
TEMPRITE	8 EXCEEDS REQUIREMENTS
GEON LATEX	7 EXCEEDS REQUIREMENTS
MACHINE SHOP	7 EXCEEDS REQUIREMENTS
AREA 4 SHOP	7 EXCEEDS REQUIREMENTS
LPA	7 EXCEEDS REQUIREMENTS
WAREHOUSING/SHIPPING	7 EXCEEDS REQUIREMENTS
BOILER HOUSE	7 EXCEEDS REQUIREMENTS
AREA 1 SHOP	7 EXCEEDS REQUIREMENTS
AREA 3 SHOP	7 EXCEEDS REQUIREMENTS
COMPOUND	6 MEETS REQUIREMENTS
TANK FARMS	6 MEETS REQUIREMENTS

HW/JS
LSVLSAFE.D&H

V. - BFGOODRICH CHEMICAL SAFETY PROGRAM RATING

LOCATION: Louisville Plant

DATE OF AUDIT: August 24-28, 1992

RATING ORGANIZATION AND ADMINISTRATION

S Management and Supervision Involvement
S Compliance with Previous Audits
S Preparation and Compliance with Job Procedures
S Procurement and Startup of New Equipment

EDUCATION, TRAINING AND MOTIVATION

S Contractor Training
S Safety Counseling
S Accident Prevention Achievement Recognition
S Fire Preparedness
S Supervisor Training
S Employee Safety Training
S Hot Work Training
S Lockout Training
S Vessel Entry Training
S Forklift Trailer Entry Training
S New Employee Indoctrination
S Safety Meetings
S First Aid
S Off-The-Job Safety

GENERAL HAZARD CONTROL

S Quality of Housekeeping Program
S Housekeeping Conditions
S Internal Safety Audit
S Equipment Guarding
S Safety Equipment
NA Hoisting Equipment (Refer to 1992-15)
S Electrical Equipment
S Forklift Trailer Entry
S Community Emergency Planning
S Forklift Operations
NA Cardinal Rule Audit System (Refer to 1992-4)

PROCESS HAZARD CONTROL

S Relief Valve and Rupture Disc Inspection
S Plant Evacuation
NA Mill Drills & System (Refer to 1992-7)
S Disaster Preparedness
S Hot Work System
S Lockout System
S Vessel Entry System
NA Maintenance Work Order System (Refer to 1992-1)
S Dust Hazard Control

ACCIDENT INVESTIGATION AND ANALYSIS

S Accident Investigation by Supervisor
S Management Systems Investigation
S Corrective Action Follow-Up System

The Status of the Individual Components Will be Indicated by:

S - The program Element
is Satisfactory

NA - The Program Element
Needs Attention

TOTAL SATISFACTORY: 37

TOTAL NEEDS ATTENTION: 4

HW/JS
lsvlsafe.d&h

NGC 12466

VI.

GEON VINYL DIVISION
SPECIALTY POLYMERS & CHEMICALS DIVISION
INDUSTRIAL HEALTH AUDIT
CHECKLIST

LOCATION Louisville

DATE 08/24-28/92

S = Satisfactory
NA = Needs Attention
DNA = Does Not Apply

A. INDUSTRIAL HEALTH PROGRAM ADMINISTRATION

1. Industrial Health Coordinator

a. Named	<u>S</u>
b. Knowledgeable	<u>S</u>
c. Walk-throughs	<u>S</u>

2. Periodic Industrial Health Program Reports

a. Timely	<u>S</u>
b. Content	<u>S</u>
c. Quarterly Reports	<u>S</u>
d. Year-end Report	<u>S</u>
e. Goals for Next Year	<u>S</u>

3. Medical Services

a. Physical Examination	<u>S</u>
b. Medical Equipment Certification Calibration (Need a spirometer calibration pump)	<u>S</u>
c. Professional Training	<u>S</u>
d. Illness and Complaint Investigation	<u>S</u>

4. Job Exposure Surveys

a. Complete (Need Maintenance Personnel)	<u>NA</u>
b. New Exposure Review	<u>S</u>
c. Annual Review and Update	<u>S</u>

5. Chemical Hazard Review and Use

a. Committee Established (New Chemical Review)	<u>S</u>
b. MSDS	
1. Available	<u>S</u>
2. Employees Trained in Use	<u>S</u>

6. Reply to Industrial Health Audits

a. Initial	<u>S</u>
b. Final Report	<u>S</u>

NGC 12467

7. PEL's and Fetal Toxicity

	Written Program	Medical Surveillance	Training
a. Hazard Communication	<u>S</u>	<u>DNA</u>	<u>S</u>
b. Acrylonitrile	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
c. Benzene	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
d. Carbon Tetrachloride	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
e. Chromium VI	<u>NA</u>	<u>DNA</u>	<u>NA</u>
f. Chloroform	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
g. Dimethyl Acetamide	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
h. Ethylene Thiourea	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
i. Lead	<u>S</u>	<u>S</u>	<u>S</u>
j. Mercury (Vapors)	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
k. Methyl Ethyl Ketone	<u>DNA</u>	<u>DNA</u>	<u>DNA</u>
l. Vinyl Chloride	<u>S</u>	<u>S</u>	<u>S</u>

8. Monitoring for OSHA PEL's and Fetal Toxicity (FT)
by Area From (month/year) 1/1/91 to Present

	Number of <u>Samples</u>	% Over <u>PEL</u>	% Over PEL Without <u>Protection</u>
a. Chromium III** PEL 0.5 ppm			
<u>Department Number & Name</u>	<u>0 (NA)</u>	<u>DNA</u>	<u>DNA</u>
b. Chromium VI** PEL Not Established - TLV 0.05 mg/m3 Fetal Toxin > 0.05 mg/m3			
<u>Department Number & Name</u>	<u>0 (NA)</u>	<u>DNA</u>	<u>DNA</u>

** These chemicals have been included in the Plant's monitoring schedule but have not been monitored yet.

c. Lead PEL 50 $\mu\text{g}/\text{m}^3$ Fetal Toxin if blood lead level <30ug/100gm blood.			
<u>Department Number & Name</u>	<u>19 (S)</u>	<u>0 (S)</u>	<u>0 (S)</u>

	Number of Samples	% Over PEL	% Over PEL Without Protection
d. Vinyl Chloride PEL 1 ppm Fetal Toxin <1 ppm			
Department Number & Name			
	160 (S)	8 (NA)	5 (NA)

e. Antimony** PEL 500 $\mu\text{g}/\text{m}^3$			
Department Number & Name			
	0 (NA)	DNA	DNA

f. Cadmium** 0.2 mg/m^3			
Department Number & Name			
	0 (NA)	DNA	DNA

** These chemicals have been included in the Plants monitoring schedule but have not been monitored yet.

g. Titanium Dioxide** 5 mg/m^3 Respirable Dust 10 mg/m^3 Total Dust			
Department Number & Name			
	0 (NA)	DNA	DNA

		<u>Number of Samples</u>	<u>% Over PEL</u>	<u>% Over PEL Without Protection</u>
h.	Tin** 2 mg/m ³			
	<u>Department Number & Name</u>	<u>0 (NA)</u>	<u>DNA</u>	<u>DNA</u>

i.	Vinyl Cyclohexane 0.1 ppm (ACGIH)			
	<u>Department Number & Name</u>	<u>3 (S)</u>	<u>0 (S)</u>	<u>0 (S)</u>

A plan has been written to address all Over Exposures without personal protection. S

** These chemicals have been included in the plants monitoring schedule but have not been monitored yet.

B. INDUSTRIAL HEALTH PROCEDURES

1. Respiratory Procedure

a.	Written	<u>S</u>
b.	Selected per Hazard	<u>S</u>
c.	Training	<u>S</u>
d.	Fit Testing	<u>NA</u>
e.	Medical Examination	<u>S</u>
f.	Cleaning	<u>S</u>
g.	Storage	<u>S</u>
h.	Inspection	<u>S</u>
i.	Approvals	<u>S</u>
j.	Usage	<u>S</u>

2. Asbestos Handling and Disposal

- | | |
|---------------------------|------------|
| a. Sources Identified | <u>S</u> |
| b. Monitoring | <u>S</u> |
| c. Medical Examination | <u>DNA</u> |
| d. demolition and Removal | <u>DNA</u> |
| e. Protective Clothing | <u>DNA</u> |
| f. Written | <u>DNA</u> |

3. Industrial Health Exposure Evaluation and Monitoring

- | | |
|---|----------|
| a. Strategies | |
| 1. OSHA Compliance | <u>S</u> |
| 2. Exposure Evaluation | <u>S</u> |
| 3. Special Requests | <u>S</u> |
| b. Sample Procedures | <u>S</u> |
| c. Analytical Procedures/Cross Check Program | <u>S</u> |
| d. Employee Notification, Interview & Documentation | <u>S</u> |

4. Radiation

- | | |
|-----------------------------------|----------|
| a. Hazards Identified and Labeled | <u>S</u> |
| b. License Requirements | <u>S</u> |
| c. Records | <u>S</u> |
| d. Dosimetry Program | <u>S</u> |
| e. Periodic Leak Checks | <u>S</u> |
| f. Radiation Protection Officer | <u>S</u> |

5. Ventilation for Health Hazard Control

- | | |
|--|----------|
| a. Periodic Flow or Maintenance Checks | <u>S</u> |
| b. Laboratory Hoods | <u>S</u> |
| 1. Yearly Flow Checked | <u>S</u> |
| 2. Rating or Flow-Rate Posted | <u>S</u> |
| c. Modifications Reviewed | <u>S</u> |
| d. New Systems Reviewed | <u>S</u> |

6. Leak Detection

- | | |
|-----------------------------|----------|
| a. Written | <u>S</u> |
| b. Area Monitoring Response | <u>S</u> |
| c. Leak Repair Control | <u>S</u> |

7. I.H. Equipment Calibration

a. Audiodosimeters

- | | |
|----------------------------|----------|
| 1. Daily Field Calibration | <u>S</u> |
| 2. Laboratory Calibration | <u>S</u> |

b. Sound Level Meters

- | | |
|---------------------------------------|----------|
| 1. Daily Field Calibration | <u>S</u> |
| 2. Laboratory Calibration/Three Years | <u>S</u> |

- | | |
|---|------------|
| c. Acoustic Field Calibrators Every Three Years | <u>S</u> |
| d. Radiation Detection Device - Annually | <u>DNA</u> |
| e. Area Monitoring Devices | <u>S</u> |
| f. Personnel Monitoring Pumps | <u>S</u> |

8. Laboratory Safety

- | | |
|--|----------|
| a. Chemical Hygiene Plan (in use) | <u>S</u> |
| b. Chemical Hygiene Officer Named | <u>S</u> |
| c. Lab Hoods Adequate for Hazard | <u>S</u> |
| d. Personnel Protective Clothing and Equipment | <u>S</u> |

9. Bloodborne Pathogen

- | | |
|------------------------------------|----------|
| a. Written Exposure Control Plan | <u>S</u> |
| b. List of Job Covered by the Plan | <u>S</u> |
| c. Training | <u>S</u> |
| d. Immunization | <u>S</u> |

10. Potable Water Safety

- | | |
|---------------------------------|-----------|
| a. Written Policy | <u>NA</u> |
| b. Water Systems Identification | <u>NA</u> |
| c. Cross Connection Avoidance | <u>S</u> |

C. Hearing Conservation and Noise Control

1. All jobs with an eight hour TWA exposure of 85 dBA (50% dose), have been identified. S
2. Noise hazardous (BFG > 85 dBA) areas have been posted. S
3. A formal list is available at the plant specifically designating hazardous and non-hazardous noise exposure jobs. S
4. Records are available showing monitoring results for those jobs that were monitored. S
NOTE: A copy of monitoring result must be entered into the Medical Surveillance System in Bath. The plant must retain its records for at least two years (OSHA).
 - a. Monitoring for OSHA Noise PEL by Area From (month/year) 1/1/91 to Present

<u>Number of Samples</u>	<u>% Over 50% Without Hearing Protection</u>	<u>% Over 100%</u>
----------------------------------	--	----------------------------

Hearing Protection Action Level 50%
Engineering Control PEL 100%

<u>Department Number & Name</u>
<u>45 (S)</u> <u>1 (S)</u> <u>11 (NA)</u>

5. When employees working on noise hazardous jobs are monitored, they are informed of the monitoring results (OSHA). S
6. Engineering and/or maintenance efforts are being directed at reducing noise in those areas/jobs with an eight hour TWA of 90 dBA or greater (100% dose) (OSHA). S
NOTE: Details of this effort must be documented.
7. Hearing protection worn in all noise hazardous areas. S

8. Hearing protectors in use are capable of reducing employee noise exposures to below 85 dBA (NOTE: "NRR" or attenuation factor on hearing protector package. Consult with Industrial Health in Cleveland if more information is needed). S
9. Employees are provided a choice of two or more different types/varieties of hearing protection (OSHA). S
10. Personnel working at noise hazardous jobs receive annual training which includes at least the following information (OSHA).
 - a. The effect of noise on hearing. S
 - b. The purpose of hearing protectors, the advantage and attenuation of various types, and instructions on selection, fitting, use, and care. S
 - c. The purpose of audiometric testing and an explanation of the test procedures. S
11. Care is exercised to insure a proper initial fit and correct use of all hearing protectors (OSHA). S
NOTE: With inset-type hearing protectors (ear plugs), it is important that the ear canal be clear and free of impacted wax. The ears should be examined for impacted wax before plugs are fitted. If impacted wax is found, it should be removed by a nurse or physician. Any employees complaining of an ear problem should be referred to medical personnel for examination.
12. Audiometric examinations are provided for:
 - a. All new hires (pre-employment). S
 - b. Transfers to noise hazardous jobs. DNA
 - c. Employees working on noise hazardous jobs (annually). S

NOTE: Details for conducting proper audiometric exams are provided in BFG's OHP Manual, Section 5.05.

13. Audiograms are permanently retained for each employee. S
14. Employees with audiograms showing a standard threshold shift (STS) are notified of this fact in writing within 21 days (OSHA).
NOTE: Employees showing a STS are to be retested within 30 days. S
15. Employees exhibiting a STS are refitted with hearing protection and retrained in its use (OSHA).
NOTE: Hearing protectors with greater attenuation may be needed. S
16. Employees showing shifts in their hearing are provided follow-up counseling based on the BFG quarterly Audio Action Report and Section 5.0-5 of the OHP manual. S
17. Cases with a confirmed average 25 dB shift from the original baseline in the frequencies 2000, 3000, and 4000 Hz, either ear, are recorded on the OSHA 200 Log. S
- 18.* The audiometer in use satisfies requirements of the ANSI standard 3.6-1969. S
- 19.* An acoustical or biological calibration is performed daily on the audiometer before use.
NOTE: Results of these tests must be kept on record for at least one year. S
- 20.* An acoustic check is performed on the audiometer annually,
NOTE: Audiometer must meet requirements of ANSI S3.6-1969. S
- 21.* An exhaustive calibration of the audiometer is performed at least every two years by the manufacturer or his approved agent.
NOTE: (#18, #19, #20) Results of all checks and calibrations must be kept on record. S
22. A copy of the OSHA noise standard is posted in the workplace or is available to employees. S

*Numbers 18, 19, 20, 21 - Where an outside audiometric testing service is employed, it must be established that these requirements are satisfied.

IH-201A
Revised 09/14/91

D. Check List Totals

Satisfactory	<u>110</u>
Needs Attention	<u>15</u>
Does Not Apply	<u>44</u>

DEG
04/10/91
ihch.aud/10

NGC 12476

